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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/464,831	12/16/1999	HABIB RIAZI	5-13-5	8145

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EXAMINER

NGUYEN, HANH N

ART UNIT	PAPER NUMBER
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2662

DATE MAILED: 09/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/464,831

Applicant(s)

RIAZI ET AL.

Examiner

Hanh Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Application filed on 12/16/99.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-11,13-19,21-24 and 26 is/are rejected.
- 7) ☒ Claim(s) 7,12,20 and 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 6, 11, 19 and 24 are objected to because of the following informalities:

In claims 6, 11, 19 and 24, line 4, it is not clearly stated to what the correlation data is compared with ? . Appropriate correction is required.

Specification

The disclosure is objected to because of the following informalities: The application numbers and filing dates on page 1, lines 6 & 8 are missing. Applicant is required to fill in the application number and the filing date.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the

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reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 4, 9, 14, 17 and 22 are rejected under 35 USC 102(e) as being anticipated by **Sinha et al.** (US Pat. No. 6,378,101 B1).

In claims 1, 4, 9, 14, 17 and 22, **Sinha et al.** discloses, in Fig.3 & Fig.4, a transmitter 30 transmitting audio programs (transmission signals) to a decoder 50 (see Fig.5) which decodes a single program within a given cluster (transmitting a transmission signal to a decoder which receives the signal). The audio programs are comprised in a plurality of K clusters (transmission signal represents M clusters) wherein each cluster comprises a set of N audio programs (each cluster comprises at least k program channels). Each cluster is comprised in a frame 40 which includes frame synchronization information (cluster synchronization information). See col.7, lines 25-30 & col.8, lines 10-20. Decoder 50 simultaneously decodes K clusters of programs, each of which comprises a set of N programs (demodulating a transmission frame comprising at least two clusters). See col.9, lines 35-42. The transmitter 30 comprises a frame formatter 37 (frame assembler) which forms F frames of audio programs (a frame assembler forming M clusters of program channels). See Fig.4, col.7, lines 7-12.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 5, 10, 15, 18 and 23 are rejected under 35 USC 103(a) as being unpatentable over **Sinha et al.** (US Pat. No. 6,378,101 B1) in view of **Limberg** (US Pat. No. 6,188,441 B1).

In claims 2, 5, 10, 15, 18 and 23, **Sinha et al.** does not disclose cluster synchronization information is represented by a maximum length PN sequence. **Limberg** discloses data field synchronization segment for signal transmission comprises pseudo-random noise sequence information (cluster synchronization information is represented by a maximum length PN sequence). See Abstract. Therefore, it would have been obvious to represent the frame synchronization information in **Sinha et al.** as PN sequence in order to detect and retrieve a desired audio program from a given cluster.

Claims 3 and 16 are rejected under 35 USC 103(a) as being unpatentable over **Sinha et al.** (US Pat. No. 6,378,101 B1) in view of **Limberg** (US Pat. No. 6,188,441 B1), and further in view of **Rittenbach** (US Pat. No. 4,219,812).

In claims 3 and 16, **Sinha et al.** does not disclose the step of using an eight-stage linear feedback shift register for generating maximum length PN sequence. **Rittenbach** discloses, in Fig.2, a Doppler radar system that generates 16 PN sequences with 255 bits a per period by utilizing combinations of feedback for an 8-stage shift register (using an eight-stage linear feedback shift register for generating maximum length PN sequence). See col.4, lines 35-40. Therefore, it would have been obvious to use the shift register of **Rittenbach** into the **Sinha et al.** in order to generate PN sequences. The motivation is to identify the received audio programs.

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Claims 6, 8, 11, 13, 19, 21, 24 and 26 are rejected under 35 USC 103(a) as being unpatentable over **Sinha et al.** (US Pat. No. 6,378,101 B1) in view of **Limberg** (US Pat. No. 6,188,441 B1), in view of **Rittenbach** (US Pat. No. 4,219,812), and further in view of **Wang** (US Pat. No. 5,802,079).

In claims 6, 11, 19 and 24, **Sinha et al.** does not disclose correlating cluster synchronization information and comparing the correlated data to identify the individual cluster of program channels. **Wang** discloses, in Fig.5, a correlator 525 for processing a sequence of synchronization frames to provide a correlated signal (correlating cluster synchronization information). A matching circuit for comparing the correlated data to a predetermined signal pattern (comparing the correlation data to a predefined signal). See col.22, lines 20-35. Therefore, it would have been obvious to combine the teaching of **Wang** with the teaching of **Sinha et al.** to identify the program channel in a given cluster.

In claims 8, 13, 21 and 26, the limitations of these claims have been addressed in claim 6.

Allowable Subject Matter

Claims 7, 12, 20 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In claims 7, 12, 20 and 25, the prior art does not disclose comparing phases of the correlation data for each cluster for identifying individual ones of the M clusters of program channels. .

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Goldston et al. (US Pat. No. 6,556,639 B1) discloses Method and Apparatus for Determining Transmission Mode and Synchronization for a Digital Audio Broadcasting Signal.

Kato (US Pat. No. 6,526,107 B1) discloses Synchronization Acquiring Circuit.

Karim et al. (US Pat. No. 6,501,810 B1) discloses Fast Frame Synchronization.

Sinha et al. (US Pat. No. 6,357,029 B1) discloses Joint Multiple Program Error Concealment for Digital Audio Broadcasting and Other Applications.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Nguyen whose telephone number is 703 306-5445. The examiner can normally be reached on Monday-Friday 8:30 AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703 306-4744. The fax phone numbers for the organization where this application or proceeding is assigned are 703 305-3988 for regular communications and 703 308-9051 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

Fax number : 703 872-9314

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Hanh Nguyen

A handwritten signature in black ink, appearing to read 'H. Nguyen'. The signature is written in a cursive, flowing style with a large initial 'H'.

August 27, 2003